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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/528,390

03/18/2005

Jens Werner Kipp

1983-126

7034

6449

7590

05/05/2008

ROTHWELL, FIGG, ERNST & MANBECK, P.C.

1425 K STREET, N.W.

SUITE 800

WASHINGTON, DC 20005

EXAMINER

HWU, DAVIS D

ART UNIT

PAPER NUMBER

3752

NOTIFICATION DATE

DELIVERY MODE

05/05/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

Office Action Summary	Application No. 10/528,390	Applicant(s) KIPP, JENS WERNER	
	Examiner Davis D. Hwu	Art Unit 3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

1. Applicant's amendment and arguments of April 28, 2008 have been entered and fully considered.
2. After careful reconsideration of the prior art, the allowance of claim 38 is withdrawn.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

4. Claims 31-34 and 39-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goenka (US Patent 5,616,067).

Goenka '067 discloses a blasting method for cleaning surfaces wherein liquid CO₂ is supplied via a feed line 121 into an expansion volume 122 and is fed under pressure with a carrier gas to a blasting nozzle 138 wherein a mixture of carrier gas and dry snow is accelerated to at least sonic speed in which the carrier gas is supplied under pressure through a blasting line 130 to the blasting nozzle, and the liquid CO₂ is transformed into dry snow in the expansion volume 122 apart from the carrier gas in the blasting line and the dry snow is introduced from the expansion volume into the blasting line upstream of the blasting nozzle (column 6, lines 33-35). Goenka '067 does not disclose the volume and cross-sectional area having the relation as recited or the flow rate ratios as recited in claims 33 and 34. It would have been a matter of design choice to have made the relation as recited since such a limitation would have involved a mere change in the sizes of the volume and area which is generally recognized as being within the level of

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ordinary skill in the art. The pressure, temperatures, and flow rate as recited in claims 40-43 would have been matters of operating preference.

5. Claims 35 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goenka (US Patent 5,616,067) in view of Armstrong.

Armstrong teaches a blast cleaning system in which various parts are insulated to maintain the required temperatures. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Goenka '067 by providing thermally insulating the expansion volume and the feed line as taught by Armstrong in order to maintain the required temperatures.

6. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goenka (US Patent 5,616,067) in view of Settles.

Settles teaches a supersonic abrasive blasting apparatus comprising swirl edges to aid in the atomization of fluids. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Goenka '067 by providing swirl edges in the expansion chamber as taught by Settles to aid in the atomization of the mixture.

7. Claims 44-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Goenka (US Patent 5,616,067) in view of Settles.

Goenka '067 discloses the instant invention except for the convergent/divergent nozzle. Settles teaches an abrasive blasting apparatus comprising a convergent/divergent nozzle. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Goenka '067 by providing a

convergent/divergent nozzle since this concept of using such a nozzle in the blasting art has already been taught by Settles. The size increase as recited in claims 46 and 52 and the length as recited in claim 51 would have been matters of design choice since such a modification would have involved a mere change in the size of a component which is generally recognized as being within the level of ordinary skill in the art.

Regarding claim 50, the angle would have been a matter of design choice also since it would have involved a mere change in the angular orientation.

8. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goenka (US Patent 5,616,067).

Goenka discloses the instant invention including a constriction 120 in a blasting nozzle 110, a mixture of gaseous, liquid, and solid CO₂ particles being produced in an expansion volume 130. Evaporation will take place naturally with or without the carrier gas, and since evaporation will take place along the length of volume 130, it would have been obvious to one having ordinary skill in the art at the time the invention was made that the evaporation zone could be determined by regulating the flow of carrier gas by flowing the gas or not flowing the gas.

Response to Arguments

9. Applicant's arguments filed April 21, 2008 have been fully considered but they are not persuasive. In the second embodiment of Goenka, column 6 lines 33-35 states that CO₂ particles pass through the channels 124 and out the orifices 126 which are apart from the carrier gas in the blasting line.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davis D. Hwu whose telephone number is 571-272-4904. The examiner can normally be reached on 8:00-4:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on 571-272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Davis D Hwu/
Primary Examiner, Art Unit 3752